Area-wide Soil Contamination Task Force
Protective Measures Subgroup Call
Friday, September 13, 2002
Land Use Scenarios and Combinations of Protective Measures

Hypothetical Situation Involving Potential Child Exposures (Residential Land Use)

Background

- The area of concern is primarily residential land, with approximately 4,000 homes and 10,000 residents. There are roughly 500 children between the ages of 0 and 5 years that live in the area of concern.

- The nature and extent of lead and arsenic contamination is largely unknown. However, based on the preliminary estimates of the Area-wide Contamination Task Force, there is reason for area residents to have moderate concern about the presence of lead and arsenic soil contamination.

- There is no immediate opportunity to secure funding from potentially liability parties (PLPs) to address the contamination. Therefore, residential home owners and state and local governments would likely bear the costs of implementing protective measures.

"Food for Thought" – Examples of Responses

The Case Studies prepared earlier this year provide several examples of how agencies and individuals responded to findings of elevated levels of arsenic and lead in previously developed residential areas. In most cases, responses include a combination of protective measures that involved a variety of players or institutions.

- Mt. Laurel, NJ: Mount Laurel Township is located in southern New Jersey. The township became aware of historical pesticide contamination following media reports on cleanup actions in nearby communities. The township's response includes a combination of protective measures and the involvement of other institutions.
    - Physical Barriers: The township and local school district have conducted soil sampling and implemented physical barriers at schools and public parks. The state requires enforceable deed notices associated with physical barriers and NJ DEP is responsible for inspecting the barriers ("cap cop").
    - Land Use Controls: The township and school district are responsible for filing bi-annual reports to NJ DEP for the deed notices that provide information on the physical barriers. Deed notices are kept on file in county deed records systems.

- Public Education Programs: The county health department and NJ DEP have provided educational materials on individual protection measures and best management practices.
- Best Management Practices/Individual Protection Measures: Homeowners implement individual protection measures and best management practices advised through the public education programs.

- Barber Orchard, NC: Barber Orchard is a 500-acre former apple orchard in western North Carolina that has been partially developed into residential housing. Residents requested that the state sample soils. Further sampling was conducted by the county health department and the U.S. EPA. A combination of protective measures have been implemented by several institutions:
  - Public Education Programs: The county and state distributed written educational materials, including ATSDR fact sheets about health concerns associated with lead and arsenic. EPA conducted public meetings.
  - Public Health Programs: The Agency for Toxic Substances and Disease Registry (ATSDR) conducted a health assessment of the residents living at the 28 properties with the highest level of soil contamination.
  - Reducing Contamination: An emergency soil removal and replacement was conducted on 28 out of 90 residential properties within the area of concern.

Discussion Questions

- What combinations of protective measures might represent a practical, reasonable, appropriate and affordable response in these types of situations?

- What factors (in addition to effectiveness, cost and practicality) will be important to consider when identifying whether particular combinations of protective measures represent practical, reasonable, appropriate and affordable responses in these situations?

- Suppose that two home owners on the same block decided to have soil on their property tested for lead and arsenic. The tests revealed low-to-moderate levels of lead in the surface soils. How might this change your responses to the above questions?

Other Questions to Keep in Mind During the Discussion

- What should trigger a response to area-wide soil contamination (e.g., current land use considerations, land use change, land sale, other)?
- Who should make decisions about when and how to respond to area-wide soil contamination? How should those decisions be made?
- Are different responses appropriate for different types of exposure (e.g., child-use areas)?
- How should protective measures be maintained and evaluated over the long term?

Hypothetical Situation Involving Undeveloped Land that May be Converted to Residential Land Use

Background

- The area of concern is 100 acres of undeveloped land that is up for sale in smaller parcels and may be converted and developed to residential land use.

- The nature and extent of lead and arsenic contamination is largely unknown. However, based on the preliminary estimates of the Area-wide Contamination Task Force, there is reason for developers to believe to have moderate concern about the presence of lead and arsenic soil contamination.

- There is no immediate opportunity to secure funding from potentially liability parties (PLPs) to address the contamination. Therefore, those who purchase and develop the parcels would likely bear the costs of implementing protective measures.

"Food for Thought" – Examples of Responses

The Case Studies prepared earlier this year provide several examples of how agencies and individuals responded to findings of elevated levels of arsenic and lead in undeveloped areas that may be converted to residential use.

- Mount Laurel, NJ:
    - Land Use Controls (Permits and Licenses): Mt. Laurel has adopted a Soil Testing Ordinance requiring developers to conduct a Phase I environmental assessment of properties prior to receiving permits for residential or non-residential development. The assessment determines whether the properties may have been used for agriculture in the past or may have contamination associated with other past land uses. Developers submit those assessments to the Township Engineer for review. The Township Engineer reviews the Phase I assessments and, if pesticides or other sources of contamination may be present, instructs the developers to test soils at the properties as part of Phase II environmental assessments and work with the NJDEP to conduct any necessary remediation. If any contaminants exceed the State cleanup criteria, the property must either be completely remediated according to State rules and regulations, or the developer needs to provide documentation from the NJDEP stating that the property may be developed with less than complete remediation according to a plan approved by the NJDEP. "No Further Action" letters from the NJDEP serve as documentation that any necessary remediation has occurred on the undeveloped properties that were formerly part of an agricultural area or orchard.

- Barber Orchard, NC.
    - Land Use Controls (Permits and Licenses): For future homes built on former orchard land (including Barber Orchard and other orchards in Haywood County), Haywood County notifies property owners who apply to the County for improvement permits for septic tanks (when the County first gets involved in the development process) that there may be pesticide residues on their properties and that they may want to have their soils and ground water tested. Since homes located more than a mile outside of cities need septic tanks, this means that, in effect, Haywood County is able to notify all property owners who are about to build on land at former orchards about the potential for pesticide contamination.

Discussion Questions

- What combinations of protective measures might represent a practical, reasonable, appropriate and affordable response in these types of situations?

- What factors (in addition to effectiveness, cost and practicality) will be important to consider when identifying whether particular combinations of protective measures represent practical, reasonable, appropriate and affordable responses in these situations?

- Suppose that a developer has purchased several parcels and conducted soil sampling to test for lead and arsenic. The tests revealed low-to-moderate levels of lead in the surface soils. How might this change your responses to the above questions?

Other Questions to Keep in Mind During the Discussion

- What should trigger a response to area-wide soil contamination (e.g., current land use considerations, land use change, land sale, other)?
- Who should make decisions about when and how to respond to area-wide soil contamination? How should those decisions be made?
- Are different responses appropriate for different types of exposure (e.g., child-use areas)?
- How should protective measures be maintained and evaluated over the long term?